Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Sense of Touch - 2-Point Discrimination Lab**

**Introduction**

During various neurological exams, neurologists will use 2-pointed objects and ask patients if they feel one point or two. Why would a neurologist be checking the sensitivity of the skin? The brain is able to determine where the body has been touched and can often identify the object that touched it because it contains a “map” that reflects the relative number of touch receptors in various parts of the body.

**Pre-Lab Questions**

1. Do you think that mechanoreceptors are distributed evenly across the body? Why or why not?
2. Which areas on the human body are most sensitive to touch?
3. If a person’s sensitivity to touch was below normal, what might this indicate to the neurologist?

**Procedure**

You and your partner will be taking turns performing the 2-point discrimination test on various parts of the body. Each partner will have each body part tested and should fill in their data table accordingly.

1. Place the test subject’s left hand palm-up and motionless on the table. Have the test subject close his/her eyes and turn their head away. Instruct them to say “One” or “Two” depending on the number of points of contact felt on the area being tested.
2. Start with the caliper closed at 0 mm.
3. Gently touch the caliper to the test subject’s fingertip.
	* *Make sure that the two points are applied simultaneously*
4. The test subject should indicate if they feel one or two points.
5. Move the caliper out to 1 mm and repeat Steps 3 & 4.
6. Continue moving the caliper out 1 mm until the test subject feels 2 points.
7. The test subject should record the number in their data table.
8. Switch roles.
9. Using the left side of the body, repeat Steps #2-9 for the remaining body parts on your data table.
10. Once you have tested all areas, calculate the reciprocal for each body part.
	* *The higher the reciprocal, the more touch receptors there are in that area*

***Note: The measurer should occasionally test for reliability of the subject’s responses by randomly touching with just one point.***

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| **Body Part** | **2-point Threshold** | **Reciprocal (1/measurement)** |
| Example | 2 mm | 1 / 2 mm = 0.5 |
| Scalp |  |  |
| Forehead |  |  |
| Cheek |  |  |
| Nose |  |  |
| Chin |  |  |
| Front of Neck |  |  |
| Back of Neck |  |  |
| Lower Back |  |  |
| Upper Arm |  |  |
| Elbow |  |  |
| Forearm |  |  |
| Wrist |  |  |
| Back of Hand |  |  |
| Tip of Thumb |  |  |
| Tip of Index Finger |  |  |
| Tip of Middle Finger |  |  |
| Tip of Ring Finger |  |  |
| Tip of Pinky |  |  |
| Front of Knee |  |  |
| Back of Knee |  |  |
| Front of Lower Leg |  |  |
| Back of Lower Leg |  |  |
| Bottom of Heel |  |  |
| Bottom of Big Toe |  |  |

**Analysis Questions**

1. Analyze your data table and describe the trends that you notice.
2. List some of the areas of the body were most sensitive to touch.
3. How do you know that they’re the most sensitive?
4. Which area(s) of the body were the least sensitive to touch?
5. Why would it be beneficial for some areas of the body to have more touch receptors than other parts of the body?